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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO
10/712,186	11/13/2003	Gregory P. Muldowney	03034US	7894
7.	590 09/09/2004		EXAMINER	
Rodel Holdings, Inc.			NGUYEN, GEORGE BINH MINH	
Suite 1300 1105 North Market Street			ART UNIT PAPER NUMBE	
Wilmington, DE 19899			3723	

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
	10/712,186	MULDOWNEY, GREGORY P.
Office Action Summary	Examiner	Art Unit
	George Nguyen	3723
The MAILING DATE of this communication app Period for Reply	pears on the cover sheet with the c	correspondence address
A SHORTENED STATUTORY PERIOD FOR REPL' THE MAILING DATE OF THIS COMMUNICATION.  - Extensions of time may be available under the provisions of 37 CFR 1.1 after SIX (6) MONTHS from the mailing date of this communication.  - If the period for reply specified above is less than thirty (30) days, a repl If NO period for reply is specified above, the maximum statutory period or Failure to reply within the set or extended period for reply will, by statute Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b).	36(a). In no event, however, may a reply be tin y within the statutory minimum of thirty (30) day will apply and will expire SIX (6) MONTHS from e, cause the application to become ABANDONE	nely filed s will be considered timely. the mailing date of this communication. D (35 U.S.C. § 133).
Status		
1) Responsive to communication(s) filed on		
	action is non-final.	
3) Since this application is in condition for allowa closed in accordance with the practice under E	nce except for formal matters, pro	
Disposition of Claims		
4) ☐ Claim(s) 1-10 is/are pending in the application 4a) Of the above claim(s) is/are withdra 5) ☐ Claim(s) is/are allowed. 6) ☐ Claim(s) 1,6,7 and 10 is/are rejected. 7) ☐ Claim(s) 2-5,8 and 9 is/are objected to. 8) ☐ Claim(s) are subject to restriction and/or	wn from consideration.	
Application Papers		
9) The specification is objected to by the Examine	er.	
10) The drawing(s) filed on is/are: a) acc	epted or b) objected to by the	Examiner.
Applicant may not request that any objection to the	drawing(s) be held in abeyance. See	e 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correc	tion is required if the drawing(s) is ob	jected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Ex	kaminer. Note the attached Office	Action or form PTO-152.
Priority under 35 U.S.C. § 119		
12) Acknowledgment is made of a claim for foreign a) All b) Some * c) None of:  1. Certified copies of the priority document 2. Certified copies of the priority document 3. Copies of the certified copies of the priority application from the International Burea * See the attached detailed Office action for a list	s have been received. Is have been received in Applicati rity documents have been receive u (PCT Rule 17.2(a)).	ion No ed in this National Stage
Attachment(s)	·	
1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)	4)  Interview Summary Paper No(s)/Mail Da	
<ul> <li>Notice of Dransperson's Patent Drawing Review (PTO-948)</li> <li>Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)</li> <li>Paper No(s)/Mail Date</li> </ul>		Patent Application (PTO-152)

### **DETAILED ACTION**

Claims 1-10 are presented for examination.

This application has been filed with formal drawings which are approved by the examiner.

# Claim Rejections - 35 USC § 112

- 1. The following is a quotation of the second paragraph of 35 U.S.C. 112:
  - The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
- 2. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
- 3. Claim 8 recites the limitation "periodic pitch" in line 3. There is insufficient antecedent basis for this limitation in the claim.

## Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- 5. Claims 1, 6-7, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakajima'6,159,088.

With reference to Figures 8 and 9, Nakjima'088 discloses the claimed invention including a plurality of mixing structures 220 or 230. Furthermore, Applicant admitted in the specification, page 2, 3<sup>rd</sup> paragraph, lines 10-15, that Nakajima groove

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configuration allows fresh slurry flowing in the first portions to "mix" with old slurry in the second portions. This inherently teaches that the groove configuration is to mix slurry in the groove.

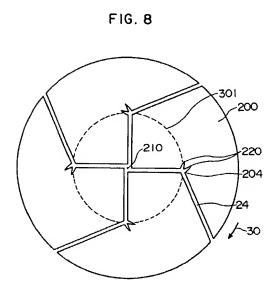


FIG. 8 shows a pattern of grooves formed in a polishing pad according to a fifth embodiment of the present invention. Here, the groove of the polishing pad shown in the second embodiment is provided at a projecting portion 204 with two extending portions 220 serving as ports for releasing the polishing slurry again in a directions opposite to the direction of rotation 30 of the polishing pad.

The polishing slurry delivered to the center portion 210 of the polishing pad will spread out toward the outer periphery of the polishing pad due to the centrifugal force of the rotation of the polishing pad, but if the polishing pad of the 20 present embodiment is used, the polishing slurry trying to flow out of the polishing pad due to the centrifugal force is positively collected in this groove 24 and the accumulated polishing slurry is released again backward at several locations reliably from the extending portions 220 of the groove 25 serving as the ports for releasing the polishing slurry newly provided at the groove portion 204 forming the largest projecting portion. With this pattern of grooves of the polishing pad, even though there is only one projecting portion, it becomes possible to deliver the polishing slurry to 30 two or more positions just by adding the extending portions 220 and therefore improvement of the quality of the polishing of the polished wafer and effective utilization of the polishing slurry become possible.

The polishing pad of the present embodiment can be used 35 while being mounted in the polishing apparatus shown in for example FIG. 1. Further, it is possible to polish a processed substrate by using this polishing apparatus.

## Allowable Subject Matter

6. Claims 2-5 and 8-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### **Conclusion**

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Andideh et al.'6,093,651, Morgan et al.'6,110,832, Kim'6,165,904, Bennett et al.'6,273,806, Moore'6,354,930, Naujok'6,761,620, Burke et

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al.'5,645,469, and Park et al.'6,729,950 all disclose polishing pad with grooves to improve polishing rate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Nguyen whose telephone number is 703-308-0163. The examiner can normally be reached on Monday-Friday/630AM-300PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 703-308-2687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

George Nguyen Primary Examiner George Ngayen \ Primary Examiner Art Unit 3723

GN - September 08, 2004